



Basics in Veterinary Hospital Set Up

-Hospital Design, Personnel & Administration

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Part 1. Hospital Design

1. Main Considerations

The design of the hospital is important and many factors should be considered to create a suitable environment. Some of the main points are listed below:

1) Space

Is each area large enough for the purpose; are there enough areas to be able to separate the hospital into rooms each with its own function and to allow for cats and dogs to be housed separately? Is there enough space for storage of supplies and equipments?

2) Environmental Conditions

Any clinical areas such as the animal wards and surgery should be maintained at a higher temperature for animals undergoing surgery or recovering from GA and for sick patients on treatment. There should be adequate and appropriate ventilation, open windows and doors do not help to maintain any heat and are also an escape route for your patients!

3) Function

Each room should be adequate for its function, they should be large enough for the purpose and have sufficient lighting, electrical sockets and be in a good location. Ideally surgery rooms on higher floors should be avoided if kennel/holding areas are downstairs. Animals should not be walking stairs before or after surgery.

4) Layout

The floor plan of the hospital or clinic should be carefully considered so that there is a flow through of traffic such as from consulting room out to treatment areas and kennels and from prep room to surgery. Having to walk through several rooms or even go outside to get from one area to another is not ideal. Where possible the front of the hospital should be for client areas such as reception and consulting rooms, and the rear be treatment areas that are more private and secure.

5) Safety and Security

Safety and Security are also a factor, safety considerations include having enough space to move around without banding into things or low door frames, also lead lines room for radiography and security of the premises for the drugs and equipment but also to prevent animals from escaping or being stolen.

2. Design of Client Areas

1) Reception



2) Waiting Area



3) Consulting Room





4) Shop/Retail Area



5) Fluid Therapy/Out Patient Treatment Area



3. Clinical Areas– not for clients

1) **Pharmacy** - Organized, Secure, Controlled Temperatures, Drug safe, Fridge/
freezer



2) **Laboratory**



3) **Prep Room**





4) Surgical Area



5) Radiography



6) Dog Kennels – for visiting time only



7) Cat Kennels – for visiting time only



Part 2. Clinic Staff

1. Veterinarians

Veterinarian is a recognized profession with regulating bodies that set codes of conduct and standards for veterinarian medicine registered with them.

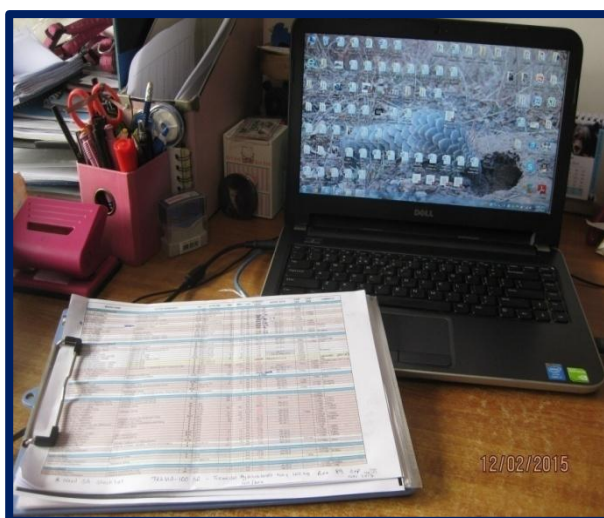
2. Veterinary Nurses/ Technicians

Veterinary nursing is a recognized profession with regulating bodies that set codes

of conduct and standards for veterinary nurses registered with them. The roles of veterinary nurse are 1) maximize vets' time; 2) administrative duties

An important role of the veterinary nurse is to monitor anesthesia in patients undergoing diagnostic testing and surgery. This is vital to ensure they do not receive too much drug and that their body systems are coping with both the anesthesia itself and also any painful procedure that may be occurring e.g. neutering, dentistry. Many types of monitoring equipment are available and provide useful additional information about the patient but nothing can beat their eyes and ears of a veterinary nurse!

Surgical nursing is part of a veterinary nurse's duties and involves preparation for surgery such as clipping and cleaning the surgical area of the patient as well as laying out the theatre to provide all the necessary instruments and consumable items the vet will need. Veterinary nurses can also 'scrub in' to assist with surgical procedures.



3. Reception Staff and Support Workers

The main purpose of reception staff and support workers are:

- Satisfy clients
- Grow hospital' s practice
- Repeat customers
- Word of mouth advertising



Recommendation: set up 24 hour emergency service.

Part 3. Record Keeping

1. Patient Records

- Important for consistency of care
- Knowing your clients & their pet can grow your business
- Mail our or email vaccine reminders, de-worming treatment reminders, elderly pet check ups

2. Consent Forms

- Most countries they are a legal requirement
- Protect the clinic
- Inform the owner of any potential risks
- Inform the owner of costs involved prior to treatment

3. Anesthesia Records

科别: _____ 病房: _____		麻醉记录		病历号: _____	
姓名	性别	年龄	身高	cm	体重
ASA 分级	<input type="checkbox"/> 急诊 <input type="checkbox"/> 择期	术前禁食 (是 <input type="checkbox"/> 否 <input type="checkbox"/>)	术前特殊情况:		
术前诊断					
拟做手术					
麻醉前用药	手术体位				
用药及输液情况	时间 (min)	O ₂			
输液					
	输血 (血型)				
出量					
术中监测	脉搏氧饱和度				
请勿写过此线	脉搏/血压	mmHg			℃
		260	40		
图例	血压	××	240		
	脉搏	●●	220		
	自主呼吸	○	200		
	机械通气	∞	180		
	麻醉开始	x	160		
	置管	⊕	140		
	拔管	⊖	120		
	手术开始	⊙	100		
	手术结束	⊗	80		
	备注:		60		
			40		
			20		
			0		
			10		

4. Client Handouts

- Informative
- Promote animal welfare
- Promote services of the clinic
- Good for business
- Can use to reinforce verbal instructions such as post surgery handouts
- Contents of client handouts can include:
 - Warn of the risk from infectious diseases
 - Skin diseases/parasites
 - Cheap topical flea treatments and their dangers
 - Promote neutering
 - Healthy diet
 - Dental care
 - Post op care

Part 4. Hospital Management

1. In Patient Care

Animals have basic needs that need to be met, especially during a time of recovery from illness or injury. As patients are in our care, we need to provide these things for them as they are unable to do so for themselves. Basic patient needs in hospital

are listed below:

- Food
- Water
- Shelter
- Warmth
- Comfort
- Opportunity to toilet/exercise
- Mental stimulation

These needs will depend on: patient condition and species that are being treated.

1) Food

- a) Nutritious, available to the digestive system
- b) High nutritional value and easily digestible
- c) Appropriate food
- d) Depend on lifestage
 - It is important to select the appropriate type of food depending on the patient' s lifestage, e.g. young/old, specific disease condition. Renal failure patient needs low salt/low protein food. Post operative patient needs highly digestible & palatable food.
- e) Hand feeding
 - Hand feeding may be required if the patient is inappetant or anorexic.
- f) Warming/variety
 - Offering warmed and various foods will help promote appetite and

eating.

g) Tube feeding:

- Tube feeding might be necessary in patients who are anorexic or have a specific reason that the full GIT is not available for feeding e.g. nasogastric tubes in patients with burns to their mouths from chemical ingestion, or PEG tubes for patients with a ruptured esophagus.

2) Water

a) Fresh daily, refilled as required

- Water is vital to life and as such we must provide it to each patient. Some patients may not seem interested in drinking or have trouble drinking by themselves but we still need to give them the choice to drink as and when they want to as this is a positive welfare opportunity.

b) Clean water bowl

c) Measured amount in some cases

- Some cases e.g. dehydrated patients or cats with a blocked bladder should have their water intake measured to allow accurate assessment of their "ins and outs" .

3) Shelter

a) Safe, enclosed, appropriate environment

- All hospitalized patients should be provided with an appropriate

environment in which to heal. In most instances this will be a kennel, however birds should be provided with an suitable cage and reptiles a vivarium.

b) Large enough to move

- The kennel should be large enough for the patient to stretch out fully move around in, providing another element of positive welfare.

c) No restraints

- There should be no need to restrain patient' s within their environment by tying them up with leads or ropes, but they should have the ability to move as they wish within the confines of their enclosure.

d) Extra security

- Some animals, especially cats should be given advanced levels of emotional security by offering places for them to hide (doesn' t need to be fancy or expensive - a cardboard box is suitable) or covering up their kennel with a blanket to reduce noise and or visual stimuli which might be frightening to them.

4) Warmth

a) Correct temp for condition/species/age

- Providing adequate heat for patients in hospital is essential to their wellbeing and recovery. It is important to ensure the correct temperature is provided for each patient depending on their condition, species and

age – very young and very old patients need a higher temperature due to their inability to thermoregulate as do patients with problems such as burns.

b) Ambient temperature/localised heat source

- Ambient temperatures should be comfortable with the provision of a localised heat source if additional heat is required.

c) Safety – burns/electrocution

- Safety must be ensured. e.g. covering up hot water bottles, ensuring heat lamps at a safe distance from patients etc. Also any cables to heat mats or heaters must be safe (no frayed cables) and cables placed where they cannot be chewed.

d) Recumbent patients

- This is especially important in recumbent patients who are unable to move away from a localized heat source if they are too hot.

e) Draught free

- The kennel area should be draught free to ensure the temperature remains stable and it is not wasteful in terms of money.

5) Comfort

a) Provide comfortable, appropriate bedding

- It's easier now to understand why providing warm, dry, padded bedding is important to promote well being and healing. Bedding should

preferentially be provided by the hospital rather than asking owners to bring bedding in as what they provide may be dirty or contaminated leading to the possibility of spread of infections within the practice.

b) Check regularly for soiling

- An absorbent and a draining layer should be provided – the draining layer e.g. vet bed on top to allow and liquids to pass through and away from the patient, the absorbent layer e.g. incontinence pads or newspaper underneath to soak up any liquids prior to changing. Bedding should be checked regularly for soiling of urine, faeces, vomit, but also water spillage – patient should be kept dry to prevent any skin scalding e.g. urine. Important to ensure there is enough bedding, dependant on the condition, especially if recumbent, as this will prevent nosocomial injuries e.g. decubitus ulcers.

c) Grooming

- Grooming is an important part of patient welfare as it makes them relax and feel more comfortable in new surroundings. It helps bond you to your patient and is very important in patients who cannot groom themselves e.g. cats with a fractured pelvis as they will feel uncomfortable and stressed if they are not able to clean themselves.

d) Calming/relaxing

e) Decreases stress

f) Improve relationship with patients

6) Opportunity to Toilet/Exercise

a) Depends on species:

- Dogs - multiple opportunities outside/ in run: Dogs require multiple opportunities to walk and toilet throughout the day – either outside or in a run. Some have a preference as to where to toilet e.g. concrete or grass while others have a command they are trained to use. Client involvement is important to know what the patient responds to.
- Cats - litter trays/privacy: Cats do not need to be walked but should be provided with a litter tray and some prefer privacy e.g. hiding the litter tray in a box, putting a towel or blanket over the kennel door or turning the light off when not in the room. Many cats may not be litter trained so other substances can be provided in the litter tray e.g. newspaper or earth but some may just urinate in the kennel directly. This is one of the reasons why checking bedding regularly is so important.

b) Depends on condition

- Sometimes the condition of the patient will require specific care e.g. patients who are weak may require assisted walking with a sling whereas those who are recumbent may benefit from urinary catheterisation. Patients who are on high levels of fluid therapy will require increased opportunities to toilet whereas others with conditions that make walking difficult e.g. respiratory or cardiac disease should be taken out less often.

7) Mental Stimulation

Mental stimulation can reduce stress and anxiety in patients who are away from home and relieve boredom in long term patients. Mental stimulation is recommended to be provided in a number of ways. Spending quality time with your patients will work wonders by cementing your relationship, allow for grooming and reassurance from you. This means times outwith when you are conducting procedures as your focus should be on the patients well being. Appropriate toys for species and condition can be offered which allow for play and enrichment. Music or radio can be a good way of having the patients feel engaged without having to spend a lot of time with them although this should not be a substitute for spending quality time with patients, more of an adjunct to it.

2. Cleaning & Hygiene

1) The Importance of Cleaning

- a) General cleanliness of the area
 - A clean and organised area helps make our job easier as things are where they should be and ready to use.
- b) Stops spread of infection
 - Having a clean environment and equipment helps stop cross infection between patients, through fomites such as bedding, bowls, brushes etc.
- c) Reduces soiling of patients/wounds/bandages

- It reduces the chance of infection from the patient's own environment also, by cleaning up any urine, faeces, vomit etc. in the kennel quickly ensuring there is no soiling of wounds, bandages etc.

d) Good impression

- Having a clean and well presented surgery also gives a good impression to your client, meaning they are more likely to trust what you are doing with their animals and become bonded to your practice than if your hospital is dirty and messy.

2) Cleaning of Isolation Area/Quarantine

This is vital to stop the spread of infectious agents to other patients within your clinic. Remember you are likely to have patients in hospital that have lowered immune systems than normal, so are much more susceptible to disease.

a) Separate from rest of clinic

b) Specific staff

- This area should be covered by different staff from the regular clinic if possible, to maintain a barrier to infection. If this is not possible, these patients should be barrier nursed and done last.

c) Equipment just for this area

- There should also be equipment and supplies specific to this area that do not go out into general circulation in the main hospital. This includes items such as stethoscope, thermometer and husbandry items such as

bedding, bowls, cleaning equipment etc.

d) Stronger disinfectants used

- In quarantine there is often a different, more powerful disinfectant used, to kill the virulent bacteria and viruses that may be present.

3) Personal Hygiene

a) Importance of handwashing

- “Hand washing is the single most important procedure for preventing nosocomial infections as hands have been shown to be an important route of infection.”
- Hands should be washed between dealing with each patient, and at the end of handling patients.

b) Wear gloves

- Gloves should be worn for changing bandages and treating any open wounds to ensure you do not pass anything on to your patients – this is for patients protection, not for staffs.

c) Remove excreta quickly

- Make sure any urine, feces or vomit is cleaned up quickly. As well as ensuring infection control, this provides a more pleasant environment for your patients to be housed in and this benefits their welfare dramatically.

d) Remove uneaten food stuffs

- Any inappetent patients should be offered food at regular intervals, but

have it cleared away if they are not eating. Having old food lying around going off/starting to smell (especially in hot weather) or attracting flies is bad practice and unpleasant and could lead to digestive upsets.

4) Appropriate Cleaning Products

a) Detergents – soap products

- Detergents are soap based products which remove dirt and grime but do not destroy micro-organisms such as bacteria and viruses, although the mechanical action of cleaning and the detergent may remove some of them from the area so the load may be reduced. Examples of these include washing up liquid and washing powder.

b) Disinfectants

- Disinfectants DO destroy micro-organisms but not always bacterial spores in the environment. Examples of these include TH4, Virkon. They MUST be used according to manufacturers instructions using the correct dilution and contact time to be effective. The choice of disinfectant you use may also depend upon the bacteria or virus you are dealing with e.g. for Parvo virus it is recommended that Virkon is used.

c) Antiseptics

- Antiseptics are products that remove micro-organisms from the skin rather than from the environment. They often contain a soap or detergent as well as an antiseptic so can be multipurpose, allowing

removal of dirt and organic matter as well as micro-organisms. Their main purpose is as a skin preparation agent for patients undergoing surgery or intravenous catheterisation and for hand cleaning of staff. Examples of antiseptics include chlorhexidine and povidine iodine.

5) Making the Correct Choice of Cleaning Products

To choose the correct cleaning products, the major factors to consider are listed below:

- Effective against particular organisms
- Effective against a range of organisms
- Any toxic/irritant effects
- Presence of organic/inorganic material
- Smell
- Cost
- Contact time
- Ease of use

6) Protocol for Effective Cleaning

Table 2.1 Protocol for effective cleaning.

Action	Rationale
(1) Remove animal to secure outside run or temporary cage (must not be another animal's kennel)	Kennel cannot be cleaned effectively with animal inside and increases risk of escape
(2) Remove bedding, newspaper, food bowls and toys	Bedding and bowls for washing, dispose of other bedding materials appropriately
(3) Remove gross soiling (faeces, etc.) with shovel or dustpan	Dispose of appropriately
(4) Clean with detergent solution	To clean away dirt and debris to prepare for effective disinfection – many disinfectants are inactivated by organic matter
(5) Rinse with water to remove detergent	Many disinfectants produce noxious gases when mixed with detergent or become inactivated by these solutions
(6) Apply appropriate disinfectant taking into consideration their recommended use and dilution rates	Some species of animal are sensitive to some types of disinfectant (e.g. cats and phenol)
(7) Leave for recommended contact time	To ensure most effective destruction of pathogenic micro-organisms
(8) Rinse thoroughly	Strong odours may be offensive and/or irritant to some animals
(9) Dry thoroughly	To prevent animal's paws from becoming wet
(10) Replace fresh bedding materials if necessary	Prepare for next occupant
(11) Return animal to kennel if necessary	Secure animal

7) Safety

Safety of patients and staff when using chemicals is paramount and must be taken into consideration.

a) Always wear protective clothing

- Staff should always wear suitable protective clothing appropriate to the product being used. Some require more than others e.g. gloves, apron, goggles, mask.

b) Prioritise patient safety

- Patient safety should be an important consideration – toxic or irritant

products should be avoided.

- c) Store products according to manufacturers instructions
 - All products should be stored safely and according to the manufacturers instructions. Once diluted, some products can be stored and used for a certain period of time, but should be disposed of after this period has passed.

8) General Cleanliness/Organization

To give a good impression to your clients and to make your work flow more easily there are several things you can do:

- a) Reduce clutter
 - Remove clutter and ensure you have enough storage space for your equipment and consumables – this will ensure your practice is easy to clean and looks neat and tidy.
- b) Cleaning system – daily/weekly/monthly
 - Work out a cleaning system to ensure cleaning of all areas is done regularly. Some areas will need to be cleaned more regularly than others.
- c) Charts
 - Use of charts to record what needs done and when and to ensure it has been carried out is very useful and helps organisation and delegation of these jobs.

9) Cleaning of Equipments

Both medical and husbandry equipments need to be clean. This is an important part of maintaining effective hospital hygiene and should be done after each use.

The common fomites are listed below:

- Food bowls/utensils
- Grooming brushes
- Mops/shovels
- Bedding

3. Equipment Care & Maintenance

1) Reasons of Equipment Care & Maintenance

- a) Reduce risk of cross infection
 - Equipment must be cleaned properly after to use to ensure it is ready for the next patient as it may be an emergency. Proper cleaning ensures there is no risk of cross infection between patients.
- b) clipper rash
 - Clipper rash is a common problem that may be caused due to improper cleaning of the blades as well as other things. It is something that is painful for the patient and easily avoided.
- c) Work safely to protect your patients

- Equipment should work properly to ensure the safety of your patients. It is easy to damage skin with broken teeth on clipper blades which can lead to painful wounds and patient interference with the area making things worse. Also, many pieces of equipment are electrical and thus can cause fires or electrocution if the wires etc. are not in good working condition and safe. Equipment should be checked regularly by an electrician to ensure it is safe to use for both you and your patient.

d) Work effectively

- Equipment that works effectively is required as it helps the surgeon in many ways. If things are working well it means the procedure can be done in the shortest possible time. This means either less physical restraint during procedures such as intravenous catheterisation, or less anaesthetic time during surgeries e.g. if clipper blades are sharp, the preparation of the patient can happen more quickly, or if surgical instruments are sharp and well cared for e.g. scissors, the surgeon's job is easier and quicker.

e) Last longer

- If equipment is properly cared for, it will last longer, meaning it has to be replaced less frequently. This is economical good news as veterinary equipment is usually expensive.

2) Standard Operating Procedures – SOPs

- a) Essential for correct use, care and maintenance
 - The use of standard operating procedures within the practice setting make it easy for all staff to know exactly how to clean, maintain and use a piece of equipment correctly.
- b) Worthwhile
 - Setting up SOPs can be a little time consuming, but are worth the effort to know that all staffs are doing things correctly.
- c) Good as a reminder
 - If the equipment is not used regularly, there is a written guide that staff can check easily on its use and care.
- d) Reduces damage
 - Using SOPs reduces the chance of damaging expensive pieces of equipment.

3) Specific Equipment Care & Maintenance

- a) Anaesthetic machine
 - Circuits cleaned at the end of each day
 - Machine taken apart and cleaned daily
 - Leak testing of circuits
 - Soda lime changed regularly
 - Vapourisers should be calibrated regularly

b) Blood analyser

- Daily cleaning – blood/contamination
- Run controls – daily/weekly/monthly
- Correct storage of consumables

c) Microscope

- Correct cleaning, especially when using oil
- Cleaning of lenses
- Bulb replacement

d) X-Ray

- Important safety rules for staff & patients
- Radiation protection supervisor
- Monitor staff exposure to radiation
- Decrease hazards of ionising radiation